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Chronology of the indices of the first RDS.

Corrections and additions are welcome. Updated 23.02.13

- (1) By the end of the year, 30 units had been manufactured.
- (2) They are being converted into RDS-2 and RDS-3.
- (3) According to plans, all should be dismantled by mid-1953.

(4) " II. In amendment to the Resolution of the Council of Ministers of the USSR of February 8, 1948, No. 234-98 , **the development of the RDS-2 in KB-11 should be terminated** , due to the fact that the uranium-235 required for this design (...) can be used more effectively in the RDS-5 design.

III. In amendment to the Resolution of the Council of Ministers of the USSR of June 10, 1948 No. 1989-773 and June 5, 1949 No. 2243-879, **suspend the development of the RDS-3 in KB-11** , due to the fact that the RDS-5 design is currently being developed, which ensures better use of uranium-235. "

Resolution of the USSR Council of Ministers No. 591-236ss/op "On the plan for scientific research and design work of KB-11". February 14, 1950.

"Atomic Project of the USSR", vol. 2, book 7, .p. 30.

- (5) Since November.

(6) " With a multilayer charge (of several concentric layers of natural uranium and compounds of tritium, deuterium and lithium-6) with a fuse from an RDS product with plutonium. " **"On the state of work on the development of the atomic industry. Not earlier than November 16, 1951."** "The USSR Atomic Project", v. 2, book 5, .p. 714

(7) Khariton Yu.B.: " It should be noted that the estimate of the 6s capacity was given within the range of 150 – 800 thousand tons. "

Minutes of the KB-11 meeting of 16 and 17.7.1954.

"The USSR Atomic Project", v. 3, book 2, .p. 202

(8) " According to preliminary calculations by physicists, this option should consist of a main charge of several hundred kilograms of liquid deuterium at a temperature of minus 250 °C, enclosed in a thin (no more than half a millimeter) shell made of a metal alloy, an intermediate detonator made of a mixture of tritium and deuterium, and a fuse (an RDS product with a charge of plutonium or uranium-235). "

"The USSR Atomic Project", v. 2, book 5, .p. 715

(9) In 1951, work on the RDS-6t was postponed for a year.

However, on July 9, 1953 (i.e., even before the RDS-6s test), in the draft report of the MSM, G.M. Malenkov was asked to " intensify the theoretical calculation work to determine the possibility of creating a hydrogen (deuterium) bomb of the RDS-6T type . "

On January 26, 1954, a " **Meeting on "T" issues with the Chief Designer of KB-11** " was held, at which " ... the participants of the meeting came to the unanimous opinion that at the present time it is advisable to conduct work on super-powerful products in other directions, especially along the path of creating large products of the RDS-6S type. "

"The Atomic Project of the USSR", v. 3, book 2, p. 135

The beginning of research on "atomic compression" led to the complete cessation of work on the RDS-6t.

By early February 1955 the project was closed.

- (10) Initially, it was planned to conduct a ground test. But plans changed:



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October 24, 2012

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1 Nov 2024, 12:58

Tehran Conference. Stalin on the role of Lend-Lease.

((note that Pavlov is not there, there is Berezhkov, also Stalin's translator) and that this is still the version of the translation of American translators, not Berezhkov. What is important here is who and how translates, from the American...

 von6j

14 Aug 2024, 17:31

You still don't know how Wikipedia lies?

And would you like to put Mr. Claude-Étienne Minié (the one named Minié bullet) into service in the RUSSIAN Imperial Army?
> 1858 he retired from the Imperial Russian Army with...

 pn64

Dec 19, 2023, 12:07 PM

Questions for Boru.

> I generally believe in little except formulas.

That's right. Only I would add documents from

" At the same time, we ask you to allow us to test the RDS-5 atomic bomb (with a small charge) by dropping it from a Tu-4 aircraft, given that the tower and building for testing the RDS-5 on the ground were severely damaged during the testing of the RDS-6s hydrogen bomb, which we did not expect, since these structures were located 7 kilometers from the site of the hydrogen bomb explosion.
In addition, as testing practice has shown, testing on the ground causes significant contamination of the surrounding area with radioactive dust. "

Note from V.A. Malyshev and B.L. Vannikov to G.M. Malenkov on the production and testing of hydrogen and atomic bombs, August 18, 1953.

["USSR Atomic Project", vol. 3, book. 2, p. 69](#)

(11) 1951 – " According to preliminary calculations by Design Bureau No. 11, the atomic charge of such an RDS product should consist of (...) uranium-235 with a small addition of (...) plutonium. "

Since 1953 – a composite uranium core (uranium of two different concentrations).

(12) Uranium parts of the RDS-7 nuclear reactor were used to manufacture the RDS-6sd bomb (which was also not tested).

Tags: [USSR](#) , [Nuclear weapons](#)

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off_topic_off

2012-10-26 06:17 (UTC)

Do you have editions of different years on the history of the 12th State University of the Ministry of Defense, Born of the Atom (1998 one-volume, 2006 two-volume, 2010 three-volume)?

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pn64

2012-10-26 10:55 (UTC)

>Do you have editions of different years on the history of the 12th State University of the Ministry of Defense of the Russian Federation
"Born by the Atom" (1998 one-volume, 2006 two-volume, 2010 three-volume)?

No.

Are there any errors in the table?

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russianforces

2012-10-26 07:16 (UTC)

Regarding RDS-5 - the main feature there is not so much that it is "low-charge" as that it used a "hollow charge".

Maybe it makes sense to include RDS-3 and RDS-5 with an external neutron initiator? In the case of RDS-3, an index was even mentioned - RDS-3I. And the tests can be identified, it seems.

RDS-4, as far as I can understand, was tested as a plutonium charge. And only then was a uranium one created. It seems there is no information that there was a version with a composite charge.

the archives here.

> But I know that Terletsky's textbook "Statistical Physics" is quite good.

I...



lyupus_est

Dec 19, 2023, 11:57 AM

[Questions for Boru.](#)

Well, I don't believe much in anything except formulas. But I know that Terletsky's textbook "Statistical Physics" is pretty good. Perhaps the intelligence officers decided to try all the options for obtaining information, and that's it...



pn64

Dec 19, 2023, 11:53 AM

[Questions for Boru.](#)

> I quoted from Terletsky's memoirs. They are online. I'm selling it for what I bought it for. Terletsky himself is perplexed as to why this was necessary and offers this explanation.

I get it.

> I'm not sure,...

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What is a "hydrogen moderator", I wonder?

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pn64

2012-10-26 10:56 (UTC)

>Regarding the RDS-5 - the main feature there is not so much that it is "low-charge" as that it used a "hollow charge".

"Hollow..." was also in the RDS-2 (revision of 1951).

The leaders of the Atomic Project considered it necessary to indicate "low-charge":

"Taking into account the results of tests of small-sized, low-charge atomic bombs and a hydrogen bomb, conducted in 1953..."

<http://pn64.livejournal.com/11220.html>

And why the hell bother with "hollow" in a device weighing 4.6 tons, equivalent to 1.6 kt? If 400 kt is also possible...

No, exactly "low-charge".

>As far as I can understand, the RDS-4 was tested as a plutonium charge. And only later was a uranium one created. It seems that there is no information that there was a version with a composite charge.

Well, how can it be, "no data", if there is:

"b) RDS-4 products with a main charge of tellurium-120 weighing 4.2 kg and tin-115 of 90% concentration weighing 6.8 kg..."

<http://pn64.livejournal.com/9333.html>

>What is, I wonder, a "hydrogen moderator"?

I don't know yet. We'll look.

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Xrussianforces

2012-10-26 11:28 (UTC)

>"Hollow..." was also in the RDS-2 (revision of 1951).

As I understand it, "shell-nuclear design" is what is called a levitated core, and "hollow" is a hollow core. These are quite different things. If I understand correctly, a "hollow" charge is a rather significant qualitative step. You cite documents somewhere that say that the design is very difficult to model and can only be tested in a real test. I may be wrong, but I have a feeling that the RDS-5 tests were experimental explosions, and not the development of combat devices. Hence the weight of the warheads - no one cared that it was 4.6 tons. At the same time, the "low-charge" RDS-5, of course, does not disappear.

With the composite RDS-4, of course, I screwed up. I need to be more careful.

I will try to ask my colleagues about the hydrogen moderator - a very strange concept. Is there perhaps a more complete excerpt from the document to see in what context it was mentioned?

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2012-10-28 15:54 (UTC)

Sorry, the question is a bit off-topic: Pavel, do you happen to know if SIOP-63 is still classified? And what can one read about the first SIOPs? (I've only come across some documents that are indirectly related to SIOP-62 in the context of the Berlin crisis, if my memory serves me right, on gwu.edu).

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2012-10-26 19:05 (UTC)

Excellent! Thank you very much.

Is a continuation planned? Or is the information on later products much worse?

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 [pn64](#)

2012-10-27 07:19 (UTC)

>Is a sequel planned? Or is there much worse information about later products?

Well, firstly, I am very interested in the first years of the atomic era (specifically - up to March 5, 1953). And secondly, or more precisely, in the 2000s, you guessed it - there is almost no information.

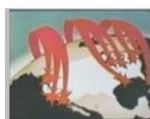
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 [Eduard Valehidis](#)

2012-11-15 17:39 (UTC)

Some overseas sources mention that there was tritium in the center of the RDS-2 core. Therefore, RDS-2 used a hollow core and a levitated core together.

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 [pn64](#)

2012-11-18 04:17 (UTC)

>Some overseas sources mention that the center of the RDS-2 core contained tritium. Therefore, RDS-2 used a hollow core and a levitated core together.

Tritium, moreover, would also mean that boosting was used.

Did you mean this?

"According to open data from the foreign press, inside the plutonium core of the charge there was a cavity (emptiness) where tritium was placed, which also intensified the explosion due to the fusion reaction."

<http://ru.wikipedia.org/wiki/РДС-2>

If "yes", then don't trust Wikipedia.

"According to open data of the foreign press..." What hitherto unknown facts are hidden by the "closed" ones?

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-

 **Eduard Valehidis**

2012-11-23 15:45 (UTC)

Here are descriptions about Joe-2, it is impossible to confirm the information just as it is impossible to refute it:

<http://www.sonicbomb.com/modules.php?name=Content&pa=showpage&pid=110>

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 **Eduard Valehidis**


2012-11-23 15:41 (UTC)

"If "yes", then don't believe Wikipedia."

Why wasn't there tritium in it? And how are you so sure, since there are no declassified drawings of this charge! We can only guess what was there.

"What unknown facts are hidden by the "closed" ones then?"

I repeat once again that the drawings of the bomb are secret, which means that everything on the Internet is just guesswork and nothing more.

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 **pn64**

2012-11-23 20:37 (UTC)

>Why wasn't there tritium in it? How can you be so sure, since there are no declassified drawings of this charge! We can only guess what was there.

The documents related to RDS-2 and signed by Beria, Kurchatov or Khariton do not mention tritium. They do mention plutonium and the levitating core. But they don't mention tritium.

>I'll repeat once again that the bomb drawings are secret, which means everything on the Internet is just guesswork and nothing more.

That's why the documents rule and will rule.

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 **buchwurm**

2013-05-06 20:19 (UTC)

It would probably be logical to add the original designations BS-2 and BS-1, used in the State Defense Committee Resolution No. 8579ss/op of May 15, 1945.

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 **pn64**

2013-05-07 04:03 (UTC)

> It would probably be logical to add the original designations BS-2 and BS-1, used in the GKO decree No. 8579ss/op of May 15, 1945.

You are partly right.

But you can't say "original designations".

BS-1 and BS-2 were to be developed according to the technical specifications of 1945:

"

*State Defense Committee
Resolution No. 8579 ss/op*

*May 15, 1945
Moscow, Kremlin*

The State Defense Committee decrees:

1. To approve the plan of scientific research work of Laboratory No. 2 of the USSR Academy of Sciences for 1945 in accordance with Appendix No. 1 and to oblige Academician I.V. Kurchatov to carry out the following design and technical work:

a) to develop in 1945 a preliminary design for the RZ installation and a technical design for one section

of this installation;

b) to develop in 1945 a preliminary and technical design for the KTV installation;

c) to develop in 1945 a preliminary design for the KG installation and by May 1, 1946 to draw up a technical design for this installation;

d) to develop in 1945 a technical specification for the design of the BS-1 and BS-2 products (6).

...

"

"The USSR Atomic Project", v.1, part 2, p.293

There is no information about what these designs were:

Note (6) to the cited document:

"

6) Products BS-1, BS-2 - atomic bombs. According to a legend circulating among physicists, BS is deciphered as "Stalin's Bomb"; more prosaic, but more likely, is that the cipher arose from the name of the atomic bomb given by I.V. Kurchatov in document No. 347 - "shell-bomb", in which the words were swapped ("bomb-shell" - BS), since the above-mentioned installations were encrypted according to the same principle. It has not been established exactly why at this stage it was planned to construct two types of bombs and how they differed, perhaps in the method of detonating the bomb ("counter shot" and "inward explosion").

"

Now about the RDS-1 and RDS-2.

The technical requirements for these products were drawn up by Yu.B.Khariton on July 1, 1946 (KB-11 was obliged to develop this new technical requirement according to a completely different Resolution of the USSR Council of Ministers, namely No. 1286-525ss of June 21, 1946). Do you know why?

Because it was by June 1946 that Soviet intelligence had received very detailed information about the design of American atomic bombs (I can, of course, scan a few pages of the Collection, but Wellerstein has already done this work: <http://nuclearsecrecy.com/blog/2012/11/30/soviet-drawings-of-an-american-bomb/>

Therefore, I think that things were like this - in May 1945, the USSR began to develop atomic bombs of its own design - BS-1 and BS-2. What these munitions were like is unknown. Work on these projects was indeed carried out - there is, for example, Khariton's technical specifications for the "body of a high-explosive bomb" from May 23, 1946.

After receiving intelligence materials on the American plutonium bomb in June 1946, a decision was made to copy its design.

So. BS-1 and BS-2 are the first Soviet atomic bomb projects, most likely having little relation to RDS-1 and RDS-2.

Since I know almost nothing about them, I did not include them in the table.

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